



Division of Ocean Sciences

Spring 2001 Newsletter

Decadal Report Suggests New Opportunities and Direction for Ocean Sciences

Extensive efforts on the part of numerous members of our community to peer into the future of the ocean sciences has culminated in the recent publication of "Ocean Sciences at the New Millennium." The report provides a compelling description of the most important and promising opportunities for discovery and new understanding in the ocean sciences over the next decade and beyond.

Prior to this effort, it had been many years since a survey of the entire field of ocean sciences had been undertaken. The scope, scale, and complexity of the field increased dramatically in the intervening years. Numerous individual re-



Co-chairs of the Decadal Committee, Ted Moore and Peter Brewer, and editor Ellen Kappel, deliver the published report to Assistant Director for Geosciences Margaret Leinen.

ports and reviews had been prepared during that time, but all focused on a subset of the ocean sciences. To gain a more comprehensive perspective, the Division of Ocean Sciences sponsored a "Decadal Committee" to examine and report on the future of oceanographic research over the next decade.

The Decadal Committee, co-chaired by Peter Brewer and Ted Moore, built upon four "disciplinary" reports (though each report frequently crossed disciplinary boundaries) covering biological, chemical, and physical oceanography and marine geology and geophysics. The reports had been prepared in the late 1990s with extensive community participation. In addition to synthesizing these reports, the Committee assimilated material from reports prepared by other committees and programs in recent years, and identified gaps and omissions in other reports.

After careful consideration, seven topics were selected for special emphasis as areas where significant progress can be made in understanding ocean processes and their

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Division Considers Moving from Target Dates to Deadlines for Unsolicited Proposal Submissions

The Division of Ocean Sciences presently uses the semi-annual target dates of February 15 and August 15 for unsolicited research proposals while using deadlines for other program solicitations (e.g., JGOFS, GLOBEC, MESH, MARGINS, LTER, Biocomplexity, ECOHAB). We are currently debating the positive and negative impacts for both the community and the Division of switching to deadlines for all research proposals (ship operations and related programs would continue to operate with target dates).

Many investigators find the distinction between a target date and deadline ambiguous. As defined in the Grant Proposal Guide (NSF 01-2), target dates are "dates after which proposals will still be reviewed, although they may miss a particular panel or committee meeting." Target dates offer more flexibility than deadlines, which are "dates after which proposals usually will not be accepted for review by NSF." Program Officers have used the flexibility afforded by target dates to accommodate, to the extent possible, those individuals who indicate legitimate circumstances that prevent them from meeting a target date.

OCE Program Officers have encountered an increasing number of proposals submitted well after the target date –

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Letter from the Division Director...

Hello and goodbye — again!

As many of you know, I retired in January 2000 to pursue a life of leisure. I was persuaded, however, to return for a brief stint in the Division to provide continuity while the recruitment for Mike Purdy's successor took place. The good news is that the announcement of the new Division Director is expected shortly. This is very good news for me as well — I enjoyed my 11-month vacation!

This was a good year to be back. The very positive budget increase for the Division (16.6%) enables all programs to have base increases to improve grant size and duration; provides sufficient funds to meet the operating costs for the academic fleet and ODP drillship with fuel costs up and a 19% increase in ship days; and allows us to fully participate in the NSF-wide priority areas for Biocomplexity in the Environment and Information Technology Research. In addition, we have provided increased resources for ocean observations and computational/data activities through the interagency National Ocean Partnership Program (NOPP); increased our education and outreach activities; and started the design effort for a new Alaska-region research vessel.

Another highlight of the year was the recent publication of *Ocean Sciences at the New Millennium*. The report is truly unique in scope -- looking across disciplines to identify the most promising opportunities for discovery in the ocean sciences over the next decade and beyond. No report in recent memory has attempted to provide a vision of the future of the ocean sciences as an integrated whole. With this new perspective, common scientific directions and technological needs across disciplines become increasingly evident. I encourage you to become familiar with the report as it will provide a basis for much of NSF Ocean Sciences future program development activities.

Despite the many highlights, I must bring to the community's attention a developing problem resulting from an increasing number of late proposal submissions to the OCE target dates for the major research review panels (see front page for details). Late submissions may be a convenience for proposers that cannot be afforded in the future. Late submissions significantly impact program officers with reviewer selection issues, significantly impact reviewers by reducing time for review (and may result in non-review), and significantly impact panelists by having incomplete peer review information for their deliberations. If late submissions do not decrease noticeably this summer, we plan to move to deadlines instead of target dates in calendar year 2002, or apply rigorous enforcement of the target dates under which a proposal will not be considered until the subsequent panel with an added six-month decision time. And who wants to lose a cruise by not meeting scheduling deadlines or have a "stale" proposal up for consideration in a very competitive environment? We alerted the Ocean Science Subcommittee of the Geosciences Advisory Committee to the problem and agreed to revisit the topic at their next meeting this fall. This is your alert that changes are coming that should benefit us all.

Ocean sciences works in a great laboratory consisting of over 70% of the Earth's surface with some 1.4 billion cubic kilometers of salty water. Life abounds above and below the seafloor, billions of tons of carbon move around, heat, energy and momentum numbers dwarf atmospheric values for climate variables, most of the earth's crust is created and destroyed in the oceanic realm and much remains to be explored in space and time. It is an exciting realm with many challenging research questions for us all. Keep at it!

Once again, it has been an enjoyable year and I wish my successor well as I return to my life of leisure.



A handwritten signature in dark ink, which appears to read "Don Heinrichs".

Donald F. Heinrichs
Interim Division Director
Division of Ocean Sciences

Avoid Glitches in Proposal/Award Processing!

Final/Annual Project Reports: If you are in a hurry to have your award processed and begin the research, do not neglect to submit final reports for previous awards. We cannot complete processing of award recommendations while a PI or co-PI on the award has an overdue final report. Overdue annual reports cause the same problem on continuing awards by blocking the continuing grant increments. When the award processing stalls out, jackets can sit for days or weeks while we contact the PIs or co-PIs to submit the overdue document. If the report is due to another Directorate, Division, or Program it may take days before the appropriate Program Officer reads and approves the report. It may be even longer before we find out about the approval. You can see where this is headed! From our perspective, we have a goal for timely processing of proposals and missing reports are a source of significant delay. The bottom line is that submitting timely progress and final reports will help us all.

Proposal Guidelines: Although things have become considerably more efficient with the new electronic proposal system, there seem to be an increasing number of proposals that do not conform to NSF guidelines provided in the Grant Proposal Guide. These deficiencies include:

- **Incomplete Biographical Sketches:** Per NSF guidelines, we need complete biographical sketches for all senior project personnel. We need a full specification of recent collaborators to identify conflicts of interest. We do not need your history of grant support, cruises, courses taught, etc. Please read the guidelines carefully and follow them.
- **Improper format (usually fonts, margins, and line spacing that are too small):** We have received numerous complaints from reviewers regarding proposal readability, including those who have declined to review proposals for that reason. We expect proposers to meet the guidelines published by the NSF. Proposal margin and spacing requirements are specified in the Grant Proposal Guide (NSF 01-2) in Chapter II Section B.2 and include the following:
Proposals must have 2.5 cm margins at the top, bottom and on each side. The type size must be clear, readily legible, and conform to the following three requirements: 1) the height of the letters must not be smaller than 10 point; 2) type density must be no more than 15 characters per 2.5 cm; (for proportional spacing, the average for any representative section of text must not exceed 15 characters per 2.5 cm); and 3) no more than 6 lines must be within a vertical space of 2.5 cm. **[Note: Although 10 pt height is mentioned, not all 10 pt fonts will meet the 15 characters per 2.5 cm spacing requirement.]**
- **Incomplete Budget Information, particularly missing or incomplete subcontracts:** Subcontract budgets, similar to the Institutional budgets, are needed to indicate where and how funds will be spent. This information is needed before the proposal is reviewed.

We will redouble efforts to check compliance and send proposals back to the institutions and investigators for complete resubmission following correction.

(decadal report continued from page 1)

impact on Earth and on society. These topics are:

- The Ocean's Role in Global Climate;
- Long-Term Ocean Observations and Prediction;
- Ocean Turbulence;
- Non-Equilibrium Ecosystem Dynamics;
- The Complex Coastal Ocean;
- The Ocean Below the Seafloor; and
- Dynamics of the Oceanic Lithosphere and Margins.

In looking at commonalities across these topics, two key characteristics emerge. The first is that each of these topics requires greater interdisciplinary cooperation in research. Second is the profound impact that new technologies have on executing novel experiments and capturing data from the ocean. Attention to effective interdisciplinary research efforts and to technology development and deployment will remain fundamentally important to scientific progress in these areas over the long-term.

The report recognizes both the remarkable progress that our community has made to date and the exciting challenges and opportunities that lie ahead. We in the ocean sciences community are clearly poised to make critical break throughs in the coming years. This report will help to focus our efforts. We extend our thanks to the co-chairs and to the Committee members (R. Beardsley, R. Bleck, K. Bruland, R. Davis, J. Deming, R. Detrick, S. Hart, M. Hay, P. Jumars, D. Karl, C. Lee, S. Lozier, D. Manahan, L. Mayer, M. McNutt, F. Millero, M. Ohman, P. Rhines, E. Silver, S. Smith, K. Turekian, F. Werner) for working on behalf of the community to articulate this vision of the future of ocean sciences.

To receive a copy of the full "Ocean Sciences at the New Millennium" report, please contact Shannon Hughes at shughes@nsf.gov. The report is also available electronically at http://www.joss.ucar.edu/joss_psg/publications/decadal/.

(target dates continued from page 1)

many of these without any prior consultation with a Program Officer. Approximately one-third of proposals in the last two cycles have been submitted after the target date. Late proposal submissions, particularly those that do not arrive within a few days of the target date, cause concern about both the fairness and quality of the review process.

Since our review process is highly competitive, individuals who receive additional time to complete proposals may be perceived as gaining advantage over other investigators who make a concerted effort to submit according to guidelines and by the published target date. As the Division's semi-annual target dates have been February 15 and August 15 for approximately a decade, the community should be able to anticipate and, in the vast majority of cases, meet these dates.

On the matter of review quality, late proposals further tax the already stressed peer review system. Late arrival of proposals prolongs reviewer and panelist selection, which must take into account the subject matter and personnel involved in all submitted proposals for a particular panel. Late arrivals ultimately impact the review timing for all proposals in the Program, hence, reviewers have less time to complete reviews before a panel meets. This reduced time leads to more proposals returned without review. As a consequence, panelists and programs have less expert input on which to base discussions, recommendations and decisions.

In addition to concerns about fairness and quality, delays caused by late proposals take away time that the program staff can put into important services to the ocean science community. Such efforts include helping with the proposal/review processes for NSF-wide competitions (e.g., Biocomplexity, Information Technology Research) where hands-on participation and advocacy can mean more resources for the community, and science development activities with the community that are geared towards developing new initiatives and securing new resources.

To remove ambiguity and eliminate late proposals, the Division may move to semi-annual deadlines of February 15 and August 15. Such deadlines are commonly used for unsolicited proposals ("core") in other Divisions at NSF. We will monitor the results of proposal submissions from the next review cycle to determine whether the pattern of late submissions is beginning to reverse. It is important for investigators to remember that any proposal arriving after the target date risks being excluded from the upcoming panel cycle. If a problem in submitting a proposal by the target date is anticipated, investigators should discuss the situation with the responsible Program Officer.

We appreciate the community's efforts in maintaining the quality and integrity of the peer review system. Should we move to using deadlines, you will receive advance notification. In the meantime, 15 August 2001 will remain a target date.

Staff Changes

Several of our staff have moved on to more hands-on research activities in recent months. **Kendra Daly**, Associate Program Director for the Biological Oceanography Program left NSF to continue her work at the University of South Florida. **Lisa Crowder**, Science Assistant for Marine Geology and Geophysics, has left Ocean Sciences to work as Yeoman on the JOIDES Resolution drillship. **Natasha Gray**, Science Assistant for Biological Oceanography has moved to the Smithsonian Environmental Research Center.

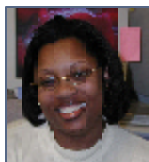
We are pleased to welcome several new arrivals to the Division:

Brad Clement is the new Associate Program Director for the Ocean Drilling Program. Brad comes to NSF from the Department of Geology at the Florida International University. His research interests are in paleoceanography with a focus on the reversal of the Earth's magnetic field. Brad has been associated in various capacities with the Ocean Drilling Program since its inception.



Susan Cook arrived in February as the new Associate Program Director for Education. Sue's an IPA from Harbor Branch Oceanographic Institution, J. Stewart Johnson Marine Education Center, where she has had extensive experience working with students at all levels. Prior to HBOI, Sue spent ten years at the Bermuda Biological Station.

Aprile Roberson, the new Program Assistant for the Ocean Drilling Program, previously worked as an Administrative Assistant with the DC Public Schools.



Pamela Shaw is the new Program Assistant for the Biological Oceanography Program. Pamela is not new to the Federal Government -- she formerly worked as an Office Automation Clerk with the Census Bureau of the Department of Commerce.

Phil Yund arrived in May as Biological Oceanography's new Associate Program Director. Phil is from the University of Maine and has experience in evolutionary and population ecology. Phil's current research includes the ecology of fertilization in free-spawning invertebrates and diverse topics in fisheries ecology.



FastLane Update

File Uploads

FastLane now supports file uploads in a variety of formats including Word, WordPerfect, PostScript and TeX (DVI files and MikTeX 1.20e compatible TeX sources, see <https://www.fastlane.nsf.gov/TeX.html>). The PI should continue to use standard fonts to avoid font substitutions and will need to proofread and accept the uploaded files. PDF files will continue to be accepted if properly created (e.g., ensuring that all fonts are embedded, the files are in Acrobat 3, 4, and 5 compatible format and that PDFWriter was not used to create the file). For more information on supported document types go to <https://www.fastlane.nsf.gov/a1/A1AcceptableFileExtensions.html>

New Check Box for Proposals That Contain High Resolution Color Graphics

For cost and technical reasons, the Foundation cannot, at this time, reproduce proposals containing color. PIs wishing to include very high resolution graphics or other graphics in their project descriptions, where exact color representations are required for proper interpretation by the reviewer, must submit 15 paper copies of the **entire** proposal (including one signed copy of the proposal Cover Sheet) to the following address:

Announcement/Solicitation No _____
National Science Foundation PPU
4201 Wilson Boulevard Room P60
Arlington, Virginia 22230

It is important to note that this submission is in addition to, not in lieu of, the electronic submission of the proposal via FastLane. NSF has added a check box on the electronic cover sheet to indicate that the proposal contains color graphics which are needed for review. By checking this box, the PI indicates that he/she intends to send NSF the requisite number of hard copies. This check box can be found in the "Remainder of Cover Sheet" section under "Other Information."

UNOLS Ship Time Request Forms

In the past, OCE requested ship time request forms for all proposals whether ship time was required or not. This is no longer necessary. Only proposals requiring ship time now need to include a request form in their proposal. The electronic UNOLS Ship Time request form is available at www.unols.org.

Scanned Documents

PIs should be careful when scanning letters of support, price quotes, etc., for inclusion in the Supplemental Documents section of the proposal. We are finding that people are scanning at very high resolutions and saving their files as bitmap (.bmp). In some instances, we have found that 3 to 5 page documents can be up to 30-50 MB, which is unnecessary. When scanning documents the output size must be 8 ½ " by 11" and files should be saved as jpeg (.jpg). Although most of the files we have received can be viewed electronically and do not look unusual on the screen, this is because Acrobat Reader automatically scales the page so that it is viewed full screen. When the page size specified on the bottom of the Reader screen is less than 8 ½ " by 11" , it can cause printing problems at NSF. Users should also avoid the "Save as PDF" functionality in HP Intelligent Scanning Software (included with many of the popular Hewlett-Packard ScanJet scanners). This software produces incompatible PDF files.

Password Reset

An automated password reset function is now available in FastLane for users who forget their passwords (see "Password Reset" on login pages). Once the user is authenticated through information presently in our database, a one-time password is generated, stored in one-way encrypted format in FastLane, and sent by e-mail to the address on record. As with virtually all FastLane functions, the password reset function is available all the time. Therefore, users no longer need to wait to contact the FastLane Help Desk or their Sponsored Research Office.

Award Letters Available Online to SROs and PIs

PIs and Sponsored Research Offices can view and print award letters as soon as an award has been made. This is available in the list of PI/Co-PI functions on the FastLane webpage.

Annual Project Reports

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least **90** days before the end of the current budget period. *Note:* Please remember to check that the reporting period start and end dates are correct before you click on the "Annual Project Report" button to begin preparing your report.

Please contact the OCE FastLane representative, Kandace Binkley, with any questions you may have. She can be reached by phone at 703-292-8582 or by email at ocefl@nsf.gov.

PROGRAM NEWS

OCEAN SECTION

Biological Oceanography

Personnel News

Dr. Kendra Daly is now at the University of South Florida's (USF) College of Marine Science - St. Petersburg. We thank her again! and again! and again!

Ms. Pamela Shaw has taken over as the Program Assistant, replacing Ms. Veronica Marjerison. You will no doubt talk to Pamela on contacting the Program. Please wish her a warm welcome.

Ms. Natasha Gray finished her tenure as the Science Assistant for the Program. She leaves NSF to go to the Smithsonian Environmental Research Center's Marine Invasions Research Laboratory. This lab addresses a broad range of issues in marine and estuarine invasion biology. Natasha will be spending a good portion of her time developing and maintaining the lab's databases and website. The rest of her time will be spent on invasion research involving coastal fouling communities in the United States and Australia. She hopes this will lead to the development of a PhD project sometime in the future. Natasha has been instrumental in upgrading the way in which we handle proposals from initial receipt through the panel process. She brought us to the "all-electronic panel" and her legacy will remain in the efficiency of our operations. She will be missed for her great efforts and her enjoyable personality.

We had a good number of qualified candidates for a "rotating" Assistant/Associate Program Director in the Program. We are glad to announce that Dr. Phil Yund joined the Program in May as a rotator and Associate Program Director. Phil comes to the NSF with strong recommendations from the community. Phil is from the University of Maine; his interests include evolutionary and population ecology. Much of his past work has focused on the biological and physical conditions that facilitate or hamper fertilization in free-spawning invertebrates, and how these influence life history evolution in the marine environment. His current research also includes molecular genetic studies on differentiation in fish populations, and possible "farming" effects of bait in the lobster fisheries. Phil will bring to the Program much expertise that is very relevant to the proposals that the community submits to us, and to the programs we support. Reminder: While Phil Yund has just come on board, we are now initiating the search for

our next rotator hoping to get someone to NSF as early as the fall.

Update on GLOBEC

U.S. GLOBEC Northwest Atlantic/Georges Bank Program: The Biological Oceanography Program, on behalf of the Division of Ocean Sciences, and in cooperation with NOAA Coastal Oceans Program, intends to initiate *Integration and Synthesis of the U.S. GLOBEC Northwest Atlantic/Georges Bank Program Studies: The impact of oceanographic and climate-related processes on the dynamics of plankton and fish populations*. This will be the fourth and final phase of the U.S. GLOBEC Northwest Atlantic Program. Its principal objective is to foster integration and synthesis of data collected during the field phases of the program, and other relevant data and knowledge, through group interactions and modeling activities. No new fieldwork will be supported. The Phase IV initiative is absolutely open to the participation of scientists without past involvement in U.S. GLOBEC as well as past and present U.S. GLOBEC investigators. The organization of principal investigators and proposals with emphasis on the integration of observations and models, and the close coordination of research groups with one another, will be vital to the success of the Phase IV synthesis effort. The deadline for proposals is 10 July 2001.

Carbon Cycling

The Ecological Determinants of Oceanic Carbon Cycling: A Framework for Research report from the March 13-16, 2000, EDOCC Workshop is available upon request while supplies last. The report can also be found at <http://picasso.oce.orst.edu/ORSOO/EDOCC/>.



REU and CURMLO students visit a bird sanctuary during the February ASLO meeting in New Mexico. Photo courtesy of Matthew Gilligan, Savannah State University.

Marine Ecological Genomics

The report from a workshop on Marine Microbial Genomics held on April 19-20, 2000, to develop recommendations for the National Science Foundation is now available. If you care for a copy of *Ecological Genomics: The Application of Genomic Sciences to Understanding the Structure and Function of Marine Ecosystems*, please contact us and we'll send one your way.

Phil Taylor (prtaylor@nsf.gov)

Dave Garrison (dgarriso@nsf.gov)

Phil Yund (pyund@nsf.gov)

Cynthia Suchman (csuchman@nsf.gov)

Pamela Shaw (pshaw@nsf.gov)

Chemical Oceanography

Biocomplexity: It's Not Just for Biologists

If you are a chemical oceanographer who has not paid much attention to the flurry of activity associated with the Biocomplexity priority area posted on the NSF website, well, you are just doing the Wrong Thing! The most recent announcement, *Biocomplexity in the Environment (BE): Integrated Research and Education in Environmental Systems* (NSF 01-34), featured four sub-activities:

- Dynamics of Coupled Natural and Human Systems (CNH)
- Coupled Biogeochemical Cycles (CBC)
- Genome-Enabled Environmental Science and Engineering (GEN-EN)
- Instrumentation Development for Environmental Activities (IDEA)

The second and fourth of these should be of particular interest to a wide spectrum of marine chemists and geochemists. CBC is especially appropriate for interdisciplinary research projects that address linkages between two or more biogeochemical cycles in relation to human or non-human biological influences. Proposals for up to five years of support may be submitted to CBC by individuals or groups, but in either case they *must* be highly interdisciplinary and the total cost must not exceed \$3M. In FY 2001 approximately \$22 million has been marked for CBC. IDEA will support research leading to the development of instrumentation and software for observing, modeling and analyzing materials and processes in the environment. Consequently, IDEA is designed to encourage the development of small research teams of instrumentation experts and environmental scientists, and proposals may request up to \$500K per year for up to five years. Both CBC and IDEA also make provision for smaller workshop, planning, and exploratory awards.

BE activities are likely to figure prominently for the near future. To keep up to date with developments, log on to the NSF website at <http://www.nsf.gov/ere>.

Planning for Carbon Cycle Research

While BE-CBC makes explicit provision for research related to the carbon cycle, planning for the future of ocean carbon cycle research is an activity that extends beyond the Division of Ocean Sciences and the Directorate for Geosciences and even beyond NSF to include linkages with other federal agency and international efforts. Here in OCE, we are working to develop a decadal plan for ocean carbon cycle research that will capitalize upon the advances of JGOFS and WOCE and move far beyond them. Thanks to the hard work of members of our community who participated in the production of the *OCTET* and *EDOCC* workshop reports and to a group of physical oceanographers who assessed the need for a continuing program of *Deep-Ocean CO2 Survey*, we have in hand a set of working documents (see the Fall 2000 Newsletter, page 3) to guide the scientific planning.

At the request of the four basic science programs in OCE, eleven members of the U.S. oceanographic community have agreed to serve on a Working Group to help us design and implement an ocean carbon cycle research program. This will be one component of a larger initiative in the GEO Directorate that encompasses a whole-earth approach to carbon cycle research and education. Consequently, while planning efforts similar to those in OCE are also proceeding in the Divisions of Earth Sciences and Atmospheric Sciences, we are committed to working cooperatively — not only across the Directorate but also with other parts of NSF and other federal agencies.

The OCE Carbon Cycle Working Group met for the first time in April. Using the *Carbon Cycle Science Plan* and the *OCTET*, *EDOCC*, and *CO2 Survey* reports as their point of departure, they have started addressing the major questions for the future and identifying priorities and themes for consideration by the Division.

Personnel News

If you are a marine chemist or geochemist and interested in coming to NSF for two years as a temporary Program Officer, we would like to hear from you! Although CO is currently at full operating strength, at least one of our program positions opens up every other year. If you think you might want to broaden your professional horizons in this way, give one of us a call anytime.

Don Rice (drice@nsf.gov)

Simone Metz (simetz@nsf.gov)

Peter Milne (pmilne@nsf.gov)

JoAnn King (jking@nsf.gov)

Physical Oceanography

The Physical Oceanography (PO) Program would like to thank the many people, both in the U.S. and abroad, who have taken the time to read proposals and provide us with thoughtful reviews. These reviews are crucial to the process of proposal evaluation. The Program would also like to express its thanks to the panelists who dedicate a substantial amount of time to reading through proposals and then coming out to Arlington and discussing them. Each May and November, eight panelists spend four days at NSF discussing between 80 and 100 proposals.

Funding highlights

The range of ocean science covered by recent proposals is refreshingly broad. Topics stretch from the dynamics of estuaries and coastal lagoons to the abyssal ocean and cover a geographic range from the sub-Arctic to the sub-Antarctic. From the proposals submitted to the November 2000 panel, 34 awards were made covering 30 science projects. These included one CAREER award, made to Mark Stacey of U.C. Berkeley who is looking at the role of fronts in estuarine circulation and transport. Nine of the awards made had lead PIs who are young investigators. Ten of the 30 projects funded from the November panel involved new field work. Another ten projects involved the final analysis or synthesis of field data already collected. In the past 6 months, the Program has also funded 2 Small Grants for Exploratory Research (SGER) and co-funded three workshops. One of the SGER's consisted of field work designed to obtain information about the nature of convection in the Japan Sea near the end of this past winter. This was a rapid-response effort, put together once it became clear that the East Siberian winter was likely to be anomalously cold. The second SGER is testing an idea about a potential mechanism for turbulence and mixing and is exploring whether this would be sufficiently significant to merit a more sustained research effort.

Funding Outlook

The Physical Oceanography Program's FY2001 budget is approximately 4% higher than in FY2000. Physical oceanographers with an interest in interdisciplinary problems have had some success in tapping the financial resources available in Foundation-wide initiatives, particularly the Biocomplexity in the Environment and the Information Technology Research initiatives. Overall proposal success rates in the initiatives tend to be lower than for Division of Ocean Sciences' core programs.

Over the past few years, by using a greater proportion of standard awards, the Program has reduced the proportion of its budget that is committed to out-year funding by roughly

5%. This has been done to increase the Program's ability to digest the occasional large, coordinated, research program. Examples of potential large programs include efforts to understand the links between western boundary currents and the adjacent gyres, the dynamics and variability of the abyssal circulation, and climate-related dynamics of the extratropical ocean.

The Program continues to fund climate-related research and, with the recent emergence of detailed CLIVAR implementation plans, anticipates a growth in the number of CLIVAR-related proposals. In the near future, Global Change research is likely to include significant efforts in the study of the carbon and hydrological cycles. An interdisciplinary advisory group has been formed to advise the Division of Ocean Sciences on research priorities for the study of the ocean component of the global carbon cycle. This group includes researchers from the Physical Oceanography community. More information may be obtained by contacting the PO program officers.

OITI

An article in the Spring 2000 OCE newsletter described the efforts of the Ocean Information Technology Infrastructure (OITI) Steering Committee. This group is charged with advising NOPP and, in particular, the NSF's Division of Ocean Sciences and the Office of Naval Research, on strategic planning for meeting the information technology infrastructure needs of the ocean science research community. The OITI Steering Committee has completed its initial draft report which reviews the IT needs of ocean science, describes some of the scientific payoffs of enhanced IT resources, and formulates a set of recommendations. The draft report should be available on the Web for comments soon. For further details, please check the following web site: <http://www.geoprosse.com/oiti/> regularly.

Staffing

The Physical Oceanography Program is currently recruiting for two positions at the Associate Program Director level or above depending on experience and qualifications. It is expected that at least one position will be filled by a rotator while the other could be filled as a permanent position. In order to maintain broad expertise in the program, we would like to recruit one observationalist (either coastal or open ocean) and one theoretician/modeler. Inquiries of a technical nature regarding these positions may be directed to Eric Itsweire at 703-292-8582.

Eric Itsweire (eitsweir@nsf.gov)
 Bill Wiseman (wwiseman@nsf.gov)
 Steve Meacham (smeacham@nsf.gov)
 Jeannie Belsches (jbelsche@nsf.gov)

MARINE GEOSCIENCES SECTION

Marine Geology and Geophysics

MARGINS

The third MARGINS competition was held in May 2001. This is the first funding cycle in which proposals for all four MARGINS initiatives (Seismogenic Zone, Subduction Factory, Rifting and Deformation of Continental Lithosphere, and Source to Sink) were considered together. A total of 44 proposals were reviewed by a joint Earth and Ocean Sciences panel. Of these seven proposals were deemed to be worthy of funding (5 SubFac, 1 Continental Rifting, 1 S2S). In addition, 1 proposal in the SubFac area held over for funding from last cycle is also planned to be funded in this cycle. The abstracts of funded proposals can be viewed on the MARGINS website at: http://www.ideo.columbia.edu/margins_. The next deadline for MARGINS proposal is November 1st, 2001 with a panel and decision date in March 2002.

The MARGINS community held a workshop in Sharm el Sheikh on the Sinai Peninsula in March 2001 to discuss the scientific issues surrounding the Red Sea area, the second chosen "focus" site for "Rifting and Deformation of Continental Lithosphere" initiative. An additional purpose of the meeting was to bring together scientists from the countries surrounding the Red Sea so that joint research strategies (all of the marine geological research in this area will be in someone's territorial waters) can be chalked out at a later stage. MARGINS is also holding a workshop in San Jose, Costa Rica, in July 2001 to discuss the results and further research planning of the SEIZE and SubFac focus site of Central America in a coordinated manner. This workshop will also bring together scientists from the focus study area.

RIDGE

The RIDGE 2000 Science Plan, *Planetary Renewal and Life in the Deep Ocean*, has recently been published and is available at <http://ridge.oce.orst.edu>. Dave Christie, the RIDGE Steering Committee, the participants in the planning workshops, and others who contributed, outline a very ambitious future. There has been considerable evolution in RIDGE science in the past decade. While many of the original questions are not yet completely answered, the new questions demonstrate that much has been learned.

Earth System History

Over the years, ESH has served a growing community of researchers engaged in an energetic and evolving research effort with the goal of understanding natural variability in the Earth's system beyond the instrumental record and across geologic time, especially in terms of climate-related processes.

To achieve these goals, ESH emphasizes interdisciplinary and coupled research to understand the mechanisms, processes, and linkages between critical elements of the atmosphere, biosphere, cryosphere, hydrosphere, and terrestrial systems. Accordingly, the ESH program supports research in quantification and development of biotic, physical, and geochemical proxy indicators, geochronological techniques, and statistical analysis relevant to ESH goals. Furthermore, scientific questions in ESH are organized within six broadly-defined Areas of Special Interest that include: 1) Paleoclimate Variability at Annual-Decadal Resolution; 2) Rapid Climate Change; 3) Extreme Warm Conditions; 4) Spatial Patterns and Continuous Records of Climate Change; 5) Arctic Paleoclimate Studies; and 6) Modeling of Past Climate Change. The most recent ESH Program announcement can be viewed on the NSF web site at <http://www.nsf.gov/pubs/2000/nsf0011/nsf0011.html>.

In an effort to ensure that ESH reflects the state-of-the-art in science and addresses important scientific questions, NSF, through the ESH secretariat, requested comments on the future intellectual focus of ESH research. By the time of publication of this newsletter, it is expected that these comments will have been presented to the ESH Steering Committee. The Steering Committee will then analyze the comments and provide NSF with recommendations based on community input.

Personnel News

We bid farewell to Lisa Crowder in April as she moved to a position as Yeoman on the JOIDES Resolution. Lisa was a tremendous asset to the Marine Geology and Geophysics program for the last two years and will be missed. However, we are delighted that she remains with the broader MG&G community.

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Ocean Drilling Program

Organizational and Personnel News

In addition to "moving" to the new Marine Geosciences Section along with the Marine Geology & Geophysics Program, ODP is also experiencing some staff changes. Jamie Allan departed to become the department chair at Appalachian State University. He will be missed, and we wish him well in his new position. We want to welcome Brad Clement from Florida International University who arrived at the beginning of May to fill this vacated position. We are also searching to fill a second visiting scientist/engineer position recently identified for the ODP Program. It is expected that this position will concentrate on IODP planning - specifically with respect to the acquisition of the non-riser drill ship. The position was announced in the November 16 issue of EOS and is described in the vacancy section of this newsletter.

ODP plans for our FY 2001 budget include increases in U.S. ODP scientific research, including incremental support for drilling-related research under the MARGINS initiative.

ODP Field Programs

Focused funding at NSF in support of ODP science is divided between the US Science Support Program (USSSP) administered by JOI (\$6.4M in FY 2000) and a separate unsolicited proposal/grant activity administered by NSF (\$9M in FY 2000). As most of you probably know, you can keep abreast of USSSP news by going to <http://www.joi-odp.org/USSSP/>. At NSF, ODP field programs supported for calendar year 2001 include: (1) an MCS and OBS study of rifting processes in the Gulf of Aden under the direction of Neil Driscoll (WHOI), John Diebold (LDEO) and Brian Taylor (University of Hawaii); (2) an MCS study of megamullions on the Mid Atlantic Ridge by Brian Tucholke (WHOI); (3) a heat flow study of the eastern Cocos plate under the direction of Andy Fisher (UCSC); (4) an MCS study of the Gulf of Corinth led by Brian Taylor (University of Hawaii); (6) construction and installation of instrumentation in the corks to be deployed at Nankai under the direction of Keir Becker (RSMAS); and (7) installation of fly-in corks in eastern Pacific ODP holes. Additional proposals for field programs are under review. To view what is being funded through the NSF/ODP unsolicited proposal/grant activity you can go to: http://www.nsf.gov/home/grants/grants_awards.htm/.

Emphasis for field programs in 2002 will shift to planning for IODP drilling - more on this soon in a future article.

Integrated Ocean Drilling Program

The International Working Group (IWG) for the Integrated Ocean Drilling Program (IODP) post-2003 continues to make solid progress toward developing the principles and framework for a new drilling program to be in place by October 1, 2003. The major events at the IWG meeting in January included the following three discussions:

(1) Discussion of review comments on the IODP Planning Subcommittee's Science Plan for IODP. Following submission of the draft initial science plan in early October, the IWG commissioned an international blue-ribbon panel to review and evaluate the proposed program. Overall, the Committee was highly supportive of the Initial Plan, noting, "the ISP is a bold interdisciplinary and international project of extraordinary importance, high promise and unique significance." Primary concerns raised with the Initial Science Plan included: (1) the lack of detail on the integration of mission specific platforms into the plan; (2) a need to clarify the strategies to encourage partnerships with other programs and industry; (3) a need to clarify the status of required technologies; and (4) further clarification on the cost estimates for the IODP. The committee also identified concerns with organization and implementation which need to be clarified in IWG - IODP planning. The updated, final plan -- "Earth, Oceans and Life" -- was published in May 2001.

(2) Discussion and acceptance of the basic principles (Platforms, Program, Membership, Implementation, and Management) for the IODP. These were described in the last newsletter, and can be found on the IODP site at <http://www.iodp.org>. The IODP Principles are designed to provide the basic framework for the IODP and its ground rules for operation, and will serve as the basis for the formal international agreements. Final consideration of the Management principle is scheduled for the June IWG meeting.

(3) Further consideration of a key provision in the Implementation Principle that calls for establishing an interim Science Advisory Structure (iSAS) until the formal IODP Science Advisory Structure is established on October 1, 2003. The iSAS will be a joint working group representing JOIDES and OD-21 science advisory committees, with approximately 1/3 Japanese, 1/3 US, and 1/3 other membership. JOIDES and OD-21 will cooperate in identifying membership on the committees. The chairs of IPSC and OD-21 scientific advisory committees will co-chair iSAS and its governing interim Planning Committee (iPC) and report directly to the IWG. IWG accepted terms of reference and operational procedures for this new structure at the January meeting. The IWG co-chairs have formally requested OD-21 and JOIDES advisory structures to form the new advisory mechanism by June of this year. It is expected that there will be significant overlap in membership between corresponding JOIDES and iSAS committees and that the committees will meet in conjunction with each other.

To catch-up further on planning activities for future scientific ocean drilling we recommend that you watch the IODP web site: <http://www.iodp.org>.

EXCOM/SCICOM Leadership Changes

Before closing we would like to take this opportunity to issue a warm welcome to Drs. Chris Harrison and Keir Becker, as the new chairs of EXCOM and SCICOM respectively, with the move of the JOIDES office from the GEOMAR Research

Center, University of Kiel, Germany to the University of Miami's Rosenstiel School of Marine & Atmospheric Science. We wish them well with their new responsibilities in this evolving and challenging period for scientific ocean drilling. At the same time, we would like to express a sincere debt of gratitude to the outgoing EXCOM and SCICOM chairs Drs. Helmut Beiersdorf (Bundesanstalt für Geowissenschaften und Rohstoffe, Germany) and Bill Hay for their efforts on behalf of JOIDES during the past two years.

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INTEGRATED PROGRAMS SECTION

Education

The Research Experience for Undergraduates (REU) Sites program is one of the main education programs supported by the Division of Ocean Sciences. REU sites are located at institutions that agree to host a small group of undergraduate students during a short-term internship period (typically 8-10 weeks in the summer). The students are assigned mentors

who help them develop an independent research project. At the end of the programs, the students prepare written and oral presentations on their work. OCE will provide funding for a total of twenty-two REU sites during 2001. A list of the 2001 REU sites is available on our webpage at <http://www.nsf.gov/home/crssprgm/reu/reuoce.htm>.

Two years ago, Drs. Russell Cuhel and Carmen Aguilar (U.Wisconsin, Milwaukee) proposed that a subset of the REU students be supported to present their work at a major oceanographic meeting. They arranged for a group of fourteen REU students to attend the 2000 ASLO meeting in San Antonio, Texas, and the 2001 ASLO meeting in Albuquerque, New Mexico. During the meeting, the students presented results of their REU research in a special poster session, and faculty mentors helped the students navigate meeting logistics and introduced them to scientists in their fields. The poster sessions attracted many posters from students who were not in the REU programs and attracted the attention of faculty, both for the work presented and as a good place to recruit graduate students. The program is so successful that we have recently provided funding for another three years.

The REU program run by Cuhel and Aguilar parallels a program run by Dr. Ben Cuker, (Hampton University) that encourages minority students to attend ASLO meetings and helps prepare them for graduate school. The program, formed by ASLO in 1989, is known as the Committee on Under-Represented Minorities in Limnology and Oceanography (CURMLO). These students are also recruited nationwide, but participation is not restricted to NSF-supported REU students. The students present results of research they have conducted; they are paired with mentors; and they attend presentations that help explain the graduate school process. This year at the ASLO meeting the REU students and CURMLO students took a field trip to visit a bird sanctuary south of Albuquerque. Be sure to look for both of these student sessions at upcoming winter ASLO meetings!

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2001 Undergraduate Student Attendees, American Society of Limnology and Oceanography, Albuquerque, New Mexico. Photo courtesy of Russell Cuhel, University of Wisconsin-Milwaukee.

Ocean Technology and Interdisciplinary Coordination

This is likely to be my final contribution to the OCE Newsletter as the technology development person and on behalf of the OTIC program. Hopefully my successor will be on board by the time the next issue is being prepared. The program has evolved and matured a lot since its inception almost twenty years ago and it is gratifying to be able to pass on to someone else such an interesting and viable

research program. There are fascinating opportunities for further evolution and enhancement in keeping with the overall objective of developing new tools and capabilities necessary for advancing ocean science research.

OCE initiated a technology development component of the Instrumentation Program in FY 1982 to address a perceived void in our ability to fund the development of new tools and instruments, not necessarily linked to a specific research project, that would have broad community use. For the first ten years, technology development was within the Facilities Section and many of the first projects it supported involved research vessel based, seagoing, shared-use instrumentation and platforms. There was a gradual move to be more inclusive of shore-based laboratory instruments and technologies as well. In 1993 technology development was moved to the Research Section as the major component of the newly established OTIC Program. The move responded to the increasingly research-oriented nature of the development projects that were being supported and underscored the importance of having new technology projects be driven by ocean research requirements. The OTIC Program and I also took on responsibility for some of the interdisciplinary and international activities within OCE, such as the Coastal Ocean Processes (CoOP) program.

In looking back, the technology development program can take partial credit for many of the research capabilities now commonly available to the research community. The program supported projects that accelerated the acceptance and use of acoustic Doppler techniques for measuring ocean currents and turbulence; and projects that improved capabilities for collecting discrete water samples at all the ocean's depths. Considerable resources went into efforts at many institutions to develop the means to collect high precision and highly accurate physical and chemical data throughout the water column. Projects were supported to explore new ways of describing and enumerating biota, both in the laboratory through the development of flow cytometry techniques and in the open ocean through various bio-optical and bio-acoustic instruments and platforms. Other efforts have involved the development of instruments, platforms, and vehicles for studying geophysical properties both on and below the seafloor. Some projects have been long-term, others short prototype tests. There have been some notable failures along the way and some projects which just didn't pan out, but if you're breaking new ground, a few stumbles must be anticipated. The technology development activity has been truly interdisciplinary, touching on every aspect of ocean science research, and I believe there have been many accomplishments.

But looking ahead, opportunities are even more exciting. In some ways, technology development is a crystal ball to the future, in that researchers need advanced tools and capabilities in order to advance our knowledge of the oceans.

Increased emphasis is being placed on our ability to make relevant long-term measurements and making these new capabilities available needs work. This new focus reflects a research trend towards more temporal ocean studies that examine processes over longer time scales than in the past. In order to meet emerging new scientific requirements, new sensors and sensing capabilities will be required, and there must be the means and the protocols for handling the new types of time-series and other data that will be generated. I foresee technology development projects in the future spanning a wide spectrum of activities from further enhancing research capabilities of vehicles such as gliders, AUVs, and floats; to developing in situ chemical analyzers, to developing ecological genomics techniques for ocean research.

I will not be leaving OCE. I will be watching oceanographic technology development activities with great interest from a different vantage point. And I'll be in a position to emphasize the importance that the technology development program remains responsive to ocean research trends and requirements. But in that there is a transition, I would like to thank the many grantees, would-be grantees, reviewers, and colleagues who have been supportive of the program. And I wish my successor the best of luck and tight end-caps.

Larry Clark (hclark@nsf.gov)

Oceanographic Instrumentation and Technical Services (OITS)

OITS involves three different programs. Two relate very closely to the UNOLS fleet, and one is part of a larger NSF-wide instrumentation program.

The *Oceanographic Technical Services Program (OTSP)* supports the NSF component of the costs of shared-use instrumentation and shipboard technical personnel on UNOLS research vessels. The *Oceanographic Instrumentation Program (OIP)* provides support for shipboard scientific instrumentation, allowing operators to update and expand the scientific capabilities of their ships. In addition, OIP has responsibility for management of the National Ocean Sciences Accelerator Mass Spectrometry (NOSAMS) facility at Woods Hole Oceanographic Institution. Besides these two programs, OITS also has responsibility for managing the Ocean Sciences-related proposals submitted to the *Major Research Instrumentation Program (MRI)*. The annual target dates for proposal submission to OIP and OTSP are September 15 and October 15 respectively. The annual deadline for the MRI program varies, but occurs between late January and mid-

February. The programmatic guidelines for the shipboard programs are described in NSF Publication 00-39, <http://www.nsf.gov/cgi-bin/getpub?nsf0039> and the most recent MRI guidelines are described in NSF Publication 01-7, <http://www.nsf.gov/cgi-bin/getpub?nsf017>. In this newsletter, we focus on changes in OTSP.

Other than OIP and our participation in MRI, the Division of Ocean Sciences does not have a special program to consider proposals for acquisition of laboratory instrumentation (in contrast to several other Divisions of NSF). We do support *development of technology* through the Oceanographic Technology program but, otherwise, the philosophy of OCE for many years has been that most instrumentation acquisition proposals should be reviewed by the research programs to which they are most applicable. The rationale is that research projects and instruments needed for them must be considered together to ensure that instrumentation awards address the objectives of the research programs. Shipboard instrument requests have been separated out for special proposal procedures, however, because they are operated as shared-use systems, addressing multi-institutional needs, and thus are often not linked to specific research objectives of the scientific institution by whom they are requested.

Oceanographic Technical Services Program (OTSP)

The objective of OTSP is to provide qualified technical staff to oversee maintenance, calibration and operation of shared-use oceanographic instrumentation on UNOLS research vessels. NSF serves as the lead federal agency for evaluation of the technical services programs in the UNOLS fleet, and has responsibility for annual negotiation of rates charged to all ship users for this purpose. Over the past three years we have overseen a revision of procedures used by the technical services groups to charge for their services, with a goal of reducing unnecessary charges and effort, improving "transparency" for scientists shifted from one vessel to another for scheduling efficiency, and expanding the types and quality of scientific equipment available to ship users. In general, the basic services component of technical services includes one or two technicians at sea, depending on the size and complexity of the ship and the specific project. Rates for technical services support are a required component of ship costs for those vessels that participate in OTSP, and like the daily rates for ship usage, they are charged for every "UNOLS Operating Day," which includes transit days and port days when away from home port. These costs are not paid from NSF research grants, but instead are provided directly to the operator from the OITS program each year, based on actual operating schedules and the percentage of them supported by NSF. Other agencies use other methods, but the costs of basic technical services are shared among users according to operating days used.

Over the past three years, we have redefined what falls within basic technical services, substantially expanding it to include most oceanographic instrumentation that is available from the ship operators. This has resulted in the elimination of separate user fees for many instruments at several institutions, shifting the costs for maintenance and operation of most shared-use instruments into the basic technical services rate. In addition, we have expanded OTSP to add a new component for "specialized services." The objective of adding the specialized services category is to simplify and reduce the cost of supporting facilities that provide a necessary service to a broad subset of users, but are not so widely used that it is appropriate to include these costs in the basic services rates. Also, these systems are mostly portable or require extra staff at sea for operations. The specialized services component provides an opportunity for improved oversight of the operation and cost of some of these facilities, since the budget oversight responsibility is no longer distributed among several programs and agencies.

Eight UNOLS operators provide technical services that are not included in basic services daily rates, and which are charged separately. Eligible costs no longer need to be included in NSF research proposal budgets, but instead are submitted annually to the Oceanographic Technical Services Program as part of the annual Technical Services proposal. This has two major advantages to the operator and the agency: 1) it requires that budgets be prepared only for projects for which the funding status is known (hence eliminating 70+% of such budgeting effort), and 2) it provides for realistic budgeting, since actual projects and realistic ship schedules are used for budget preparation. For CY 2002, the specialized services that are offered as shared-use capabilities by UNOLS operators include multibeam sonars (WHOI, SIO, UW, LDEO), towed seafloor mapping system (Hawaii), piston corers (OSU and WHOI), undulating towed vehicles (OSU, SIO, URI, MLML), seismic reflection profiling (LDEO, SIO) and a new, hydrographic doppler sonar on R/V Revelle (SIO).

Major Research Instrumentation (MRI)

The annual deadline for MRI is late January to mid-February (review of this year's proposals will be nearing completion by the time this article is published). MRI has \$75 million this year, up from \$50 million in each of the last several years. This year, the Division of Ocean Sciences has 28 requests totaling a bit more than \$15 million. We will discuss MRI in more detail in the next newsletter.

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Other Noteworthy News...

Division Sees 16.6% Growth in FY 2001 Budget

The FY 2001 Current Plan for the Division of Ocean Sciences is \$257.93 million or a 16.6% increase over FY 2000. This represents the largest dollar increase the Division has ever received. Within this increase, funds are directed toward improving grant size and duration, meeting facility needs, and fully participating in the agency-wide priority areas for Biocomplexity in the Environment and Information Technology Research.

President's FY 2002 Budget for NSF

The National Science Foundation has requested \$4.47 billion for Fiscal Year 2002, \$56.1million or 1.3% over FY 2001. The FY 2002 request for the Division of Ocean Sciences is \$255.25 million, a decrease of \$2.68 million, or 1.0% from

the FY 2001 Current Plan. Details of the NSF budget request are available at <http://www.nsf.gov/home/budget/start.htm>. This request is presently being considered by the cognizant House and Senate Appropriations Committees.

Ocean Policy Commission Appointed

The Oceans Act, which became effective on January 20, 2001, establishes a Commission to make recommendations for a coordinated and comprehensive national ocean policy. The sixteen members of the Commission, twelve nominated by Congress and all appointed by the President, are Robert Ballard, Lillian Barrone, Ted Beattie, James Coleman, Ann D'Amato, Lawrence Dickerson, Paul Gaffney, Marc Hershman, Paul Kelly, Christopher Koch, Frank Muller-Karger, Ed Rasmuson, Andrew Rosenberg, William Ruckelshaus, Paul Sandifer, and James Watkins. For further details, go to <http://www.whitehouse.gov/news/releases/2001/06/20010615-14.html>.

Proposal Target Dates/Deadlines

Programs

Target Dates/Deadlines

Ocean Section (OS)*

Unsolicited proposals for Biological Oceanography, Chemical Oceanography, and Physical Oceanography

Feb. 15 & Aug. 15

Marine Geosciences Section (MGS)*

Unsolicited proposals for Marine Geology & Geophysics and the Ocean Drilling Program

Feb. 15 & Aug. 15

Integrated Programs Section (IPS)

Instrumentation Development/OTIC
Shipboard Scientific Support Equipment
Oceanographic Instrumentation
Ship Operations
Oceanographic Technical Services

Feb. 15 & Aug. 15

Sept. 1

Sept. 15

Oct. 1

Oct. 15

Inter-Agency and Special Initiatives

Climate Variability and Predictability (CLIVAR)
Ridge Inter-Disciplinary Global Experiments (RIDGE)
WOCE, Analysis, Interpretation, Modeling, and Synthesis (AIMS)
Global Ocean Ecosystems Dynamics
Joint Global Ocean Flux Study (JGOFS)/Synthesis and Modeling
Continental Margins Research (MARGINS)
Ecology of Harmful Algal Blooms (ECOHAB)
Earth System History (ESH)

Feb. 15 & Aug. 15

Feb. 15 & Aug. 15

Feb. 15 & Aug. 15

July 10, 2001, 3pm (deadline)

August 16, 2001 (deadline)

Nov. 1, 2001 (deadline)

TBD, 2002

TBD, 2002

Other NSF programs of interest to ocean scientists

Major Research Instrumentation
CAREER (Faculty Early Career Development Program), Geosciences Directorate
Research Experiences for Undergraduates (REU) Program (NSF 00-107)
(contact research program regarding REU Supplements)
Biocomplexity in the Environment (BE)
Nanoscale Science and Engineering (NSE)
Information Technology Research (ITR)

TBD, 2002

July 26, 2001 (deadline)

Sept. 15, 2001 (deadline)

TBD 2002

TBD 2002

TBD 2002

* Proposals for field programs that require the use of University-National Oceanographic Laboratory System (UNOLS) ships in the following calendar year (2003) must be submitted by the February 15, 2002, target date.

Vacancies in the Division of Ocean Sciences

Vacancy announcements with further details about the positions listed below may be accessed on the NSF web site at <http://www.nsf.gov/home/chart/work.htm>.

Associate Program Director, Oceanographer AD-3; Ocean Drilling Program

The Associate Program Director provides technical and scientific oversight to ensure integrity and consistency in proposal process; monitors program resources and technical developments with respect to program supported facilities and scientific infrastructure; administers review and award recommendations; represents program, Division, and Foundation, within the scientific community, accurately reflecting NSF policy and positions, pursues affirmative action and EEO goals; provides scientific and technical evaluation for other programs in NSF, including international and cross-directorate programs, etc. Applicants for this position must have four or more years of managerial experience, successful research and/or research administration experience pertinent to the position; plus a Ph.D. or equivalent experience in marine science, marine engineering, or a related field. Previous involvement with ocean drilling would be an advantage, but is not required. For more information, please go to <http://www.nsf.gov/home/chart/work.htm>.

Associate Program Director/Program Director, Oceanographer (two positions) AD-3 or AD-4, respectively; Physical Oceanography Program

The incumbent will provide expert scientific and technical knowledge in the subdisciplines of science assigned to the program; manage program resources to insure integrity and consistency in the grant/declination process; advise and assist in the development of program goals and objectives; plan for the budget, allocate and distribute resources within that budget and manage post-award evaluation, and assess program accomplishments; create and maintain linkages to other NSF units and other Federal agencies; develop policies and plans for strengthening research and education programs; serve as a consultant and participate in the presentation and dissemination of a variety of informational documents on program plans and progress toward goals. Applicants for the AD-3 position must have a Ph.D. or equivalent experience in physical oceanography or a related disciplinary field plus four or more years of successful research, research administration, and/or managerial experience beyond the Ph.D. Applicants for the AD-4 position must possess a Ph.D. or equivalent experience in physical oceanography or related disciplinary fields and six or more years of successful research, research administration, and/or managerial experience beyond the Ph.D.

Associate Program Director, Oceanographer AD- 3; Chemical Oceanography Program

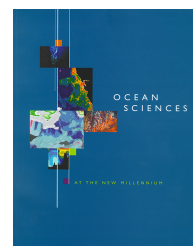
The Associate Program Director manages/monitors grants, cooperative and interagency agreements and contracts; evaluates program content and progress through review and evaluation of reports and publications submitted by awardees and/or by meetings with awardees at NSF or site visits; prepares reports and recommendations for NSF on the accomplishments of the Foundation programs under his/her purview; recommends/implements new or revised policies and develops technical, fiscal and administrative approaches to improve the activities and management of the program; and represents NSF within the scientific community, Federal agencies, and outside organizations. Applicants for this position must have a Ph.D. or equivalent experience in chemical oceanography or a closely related field pertinent to the position plus four or more years of successful research, research administration, and/or managerial experience beyond the Ph.D.

Assistant or Associate Program Director, Biological Science Administrator AD- 2 , AD-3; Biological Oceanography Program

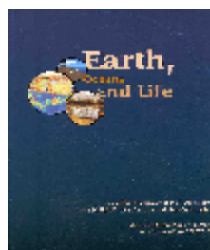
Coming soon! Please monitor our job information web site, noted above, for the forthcoming vacancy announcement.

Reports Now Available!

***Ocean Sciences at the
New Millennium***
Decadal Committee,
Peter Brewer and Ted Moore,
co-chairs



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<http://www.geoprose.com/decadal>.



***Earth, Oceans and Life:
Integrated Ocean Drilling
Program Initial Science
Plan, 2003-2013***

The Initial Science Plan, and additional planning information on the program, is available at
<http://www.IODP.org/>.

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Grantees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities, and persons with disabilities to compete fully in its programs. In accordance with federal statutes, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement or contact the program coordinator at (703) 292-6865.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Relay Service (FRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation regarding NSF programs, employment, or general information. TDD may be accessed at (703) 292-5090 or through FRS on 1-800-877-8339.

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This newsletter is published and distributed by:
Division of Ocean Sciences
National Science Foundation
4201 Wilson Blvd, Suite 725
Arlington, VA 22230

NATIONAL SCIENCE FOUNDATION
ARLINGTON, VA 22230

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